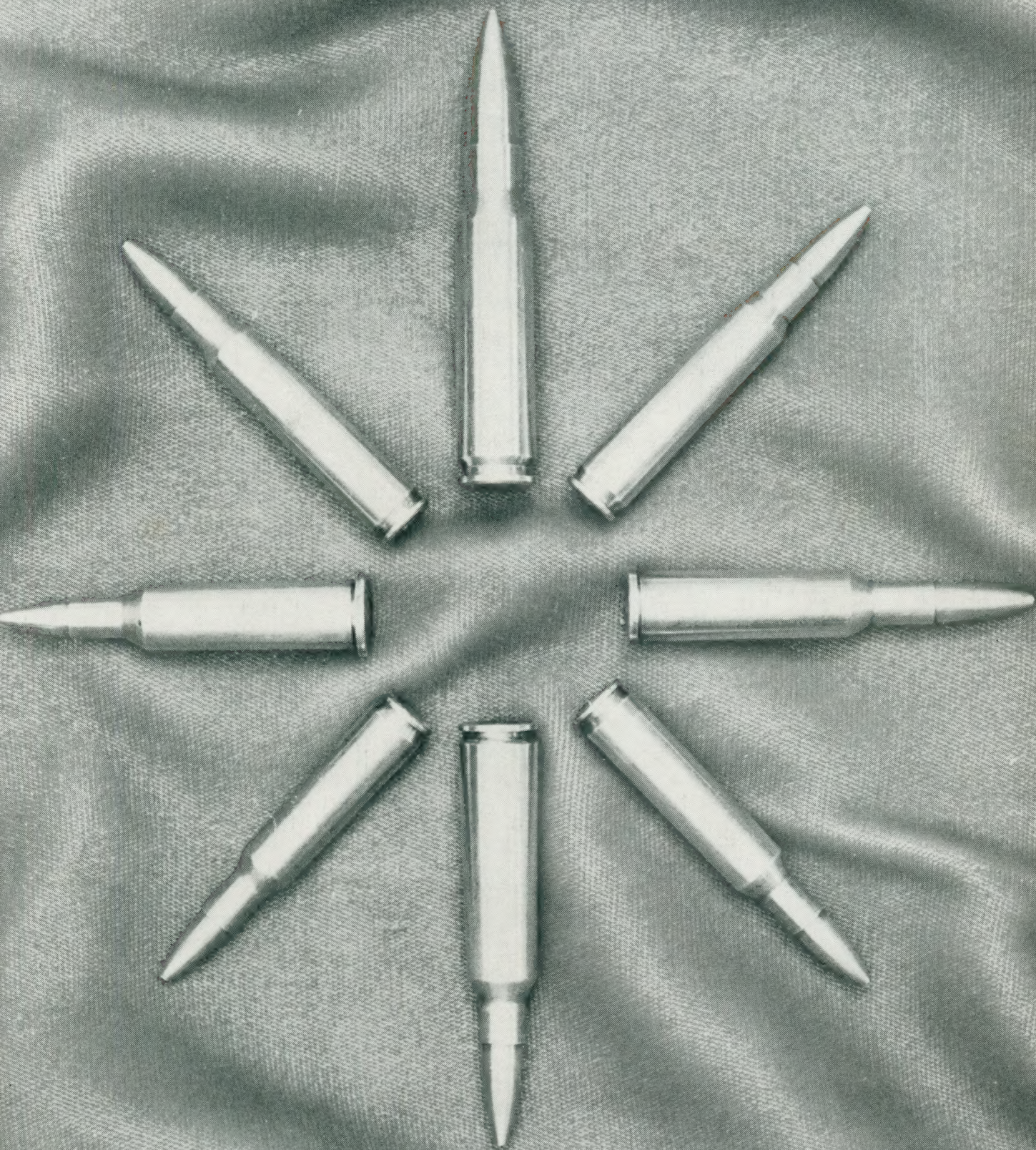


Precision

FEB. 1970
Vol. 14 No. 10
Fifty Cents

SHOOTING

*a magazine
for shooters
by shooters*



BENCHREST

Shooting Primer

Should one be inquisitive about the sport of Bench Shooting, but doesn't know how to start, he should read these instructions:

The act of Bench Shooting consists of sitting at a bench with a rifle resting on sand bags. The object of this position is to eliminate, as much as possible, the errors encountered in the process of holding and firing a rifle. Bench Shooting is a **sport**, competitive or individual. The personal satisfaction gained in the ability to place one bullet on top of another, thus making a one hole group at 100 Yards and often at 200 Yards, has captivated an enthusiastic interest of many shooters for this kind of sport. It is particularly suited to both men and women who are not interested in indulging in the more vigorous or active sports. Therefore many Bench Shooters are of the older set. This does not mean, however, that it does not present a challenge to the younger shooter; it will engage and tax his capabilities as well.

The current popularity of this kind of shooting was generated in the years 1949 and 1950. At that time a competitive program was introduced and has since been expanded.

Once an individual has selected the most appealing Bench Class, it is very

important that he attends some of the **Matches**. Here he will learn much by asking questions, observing the equipment and methods used for loading and shooting. Any Bench Shooter is more than anxious to help a newcomer.

The equipment needed to participate is available, for the most part, from PRECISION SHOOTING advertisers. It includes rifles, telescopes, rests, sand bags, loading tools, bullets, cleaning materials, powder, primers, etc.

Lastly, if possible, get the advice of a person in the game before making purchases.

Should an individual or a club wish further information, write to M. H. Walker, R.D. #1, Mohawk, N. Y. 13407; or the Editor of PRECISION SHOOTING.

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PRECISION SHOOTING

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Editor — EMORY L. TOOLY
President — MERLE H. WALKER
TECH. EDITOR
Vice-President — DERMOT C. REILLY
Treasurer — EMORY L. TOOLY
Corp. Clerk — GEORGE J. STANNARD, JR.

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NOTICE TO ADVERTISERS

PRECISION SHOOTING is printed by letterpress. Display cuts are to be furnished by the advertiser. Advertising engravings will be made at standard rates if good black and white glossy prints are provided. Displays will be made to Advertiser's specifications. All normal composition will be set according to our own standards. Rate cards will be mailed to Advertisers on request.

About the Cover

Of these 8 Benchrest cartridges the 22/250, placed at 6 o'clock, is probably the most ancient (but still modern to many), and the 6mm Donaldson Wasp is probably the most recent vintage, at 3 o'clock.

Starting at the top (12 o'clock) and going clockwise the cartridges are: .308, 6/47, 6mm Donaldson Wasp, .222½ Rem., 22/250, .222, .219 Donaldson Wasp, and at 10:30 is the 222 Rem. Magnum.

IBS MEMO

New Targets & Charter Members

New IBS targets are in process. All clubs holding IBS shoots this year should **order immediately**. Mail order to: Emory L. Tooley, Box 148, Dolgeville, N. Y. 13329. Prices will be established and not greater than former rates.

At the moment, 100 and 200 yard B.R. targets will be in cartons of 500 only. Hunter targets will be sold in cartons of 250. All clubs having official NBRSA targets on hand may use them.

All who become members of IBS before the next annual meeting of the organization shall be classified as **charter members**. The annual membership fee is \$8.00 — Life membership is being considered and should be reported out of committee in the next few weeks.

QUALITY GUNSTOCKS

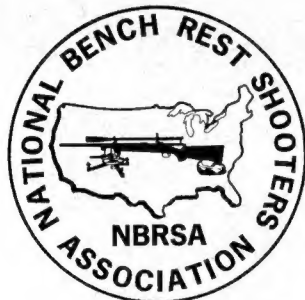
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IBS

News Releases

EDITORIAL

For you shooters who have reservations about the new shooting organization IBS, particularly the Hunter Class shooters, a few words of explanation are in order.

The Hunter Class has been carried by the NBRSA as an experimental class since its introduction. Targets were designed and printed, match schedules were established, rules finalized and altered at suggestions from shooters in this class, publicity given to match dates to help attendance, and shoot reports printed in Precision Shooting to help the clubs and give publicity to the Hunter Class as a shooting game.

In the process of doing these things the officers of the organization contributed their time, their effort, and their money in the form of travel, correspondence, stenography, and art work. There is not a dedicated, hard working officer in the group who spends less than \$500 per year on travel and correspondence, gratis, in the interest of bench rest shooting.

These guys are trying to do a job and with your help they can do it.

In order to make bench rest shooting an organized sport capable of standing on its own, at least 2000 additional organization members are required. The Hunter Class was initiated with this in mind. The \$8.00 membership fee and the 50 cents per day shooting fee are methods of achieving financial solvency. If you can suggest better methods please don't hesitate. For these expenditures, the lowest in any organized sport, including all other types of shooting, you get:

1. A source of printed targets at cost plus handling.
2. The organization periodical, Precision Shooting, monthly.
3. A place to have your match dates printed, without charge.
4. A place to have your shoot reports printed for other shooters to read, without charge.
5. An organization to help schedule matches, organize standard rules, maintain data on record scores and give them publicity, etc.

If you feel you are not getting your money's worth, how about giving us a few suggestions on methods of reducing the cost?

If you feel you are getting your money's worth, get out and sell a few memberships. If enough shooters do this, maybe the price can be reduced.

1970 TENTATIVE MATCH SCHEDULE

INTERNATIONAL BENCHREST SHOOTERS

Apr. 19, York (H)
Apr. 26, Dauphin (H)
May 3, Hamburg (H)
May 10, Harvey's Lake (H)
May 17, York (H)
May 24, Council Cup (H)
May 29-30-31, Fassett (All V.)
May 31, Dauphin (H)
June 7, Sulphyr Spa. (H)
June 7, Fassett (H)
June 14, Harvey's Lake (H)
June 13-14, Council Cup
(H.B. & H.V.)
June 21, York (H)
June 20-21, Johnstown (H.B. & H.V.)
June 28, Dauphin (H)
July 3-4-5, Council Cup (All V.)
July 5, Sulphyr Spa (H)
July 12, Harvey's Lake (H)
July 19, York (H)
July 23-26, Fassett
(IBS All V. Championship)
July 26, Dauphin (H)
Aug. 2, Sulphyr Spa. (H)
Aug. 9, Council Cup (H)
Aug. 16, York
(H County Championship)
Aug. 23, Dauphin (H)
Aug. 21-22, Council Cup
(IBS HB Championship & Aug. 23
if overrun)
Aug. 30, Harvey's Lake (H)
Sept. 6, Hamburg (H)
Sept. 6, Blue Trail, Conn.
(H.V. & L.V. State Championship)
Sept. 13, Dauphin (H)
Sept. 12-13, Johnstown
(H.V. & L.V. New York State
Championship)
Sept. 19-20, York
(IBS H Championship)
Sept. 27, Sulphyr Spa. (H)
Oct. 4, Fassett (H)
Oct. 11, Dauphin (H)

(Next page please)

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Oct. 18, York (H)
 Oct. 25, Harvey's Lake (H)
 Nov. 8, York (H)

NOTE: The above dates are classified as tentative. Clubs that were unable to have a representative at the Jan. meeting should contact Paul J. Hart, R.D. #2, Lafayette, N. Y. 13084. Phone 315 NX 6-5624.

NOTE: The Hunter Rifle matches are **not closed dates** for the other competitive H.B. and Varmint classes. They are compatible meaning H.B. and Varmint classes can be held on the same dates.

NEW HUNTER RIFLE CLASSIFICATION

0-228 — Novice Class
 229-239 — Hunter Class
 240-250 — Master Class

EASTERN REGION

NBRSA MATCH SCHEDULES (Tentative)

April 18-19, Reeds Run—B.R. - H.V.
 May 16-17, Reeds Run—B.R. - H.V.
 May 30-31, Chippewa—B.R. - H.V.
 300M Course
 July 4,5, Reeds Run—H.V. - L.V. - S
 Eastern Region Championship
 Aug. 4-5-6-7, Reeds Run—
 B.R. Nationals
 Sept. 5-6, Reeds Run—B.R. Eastern
 Region Championship
 Aug. 25-28, Midland, Texas—
 NBRSA Varmint Nationals

Advertisers Index

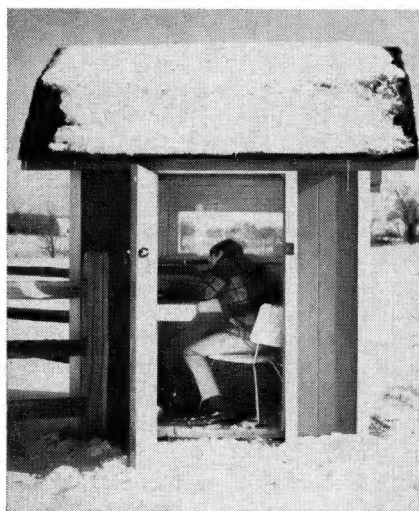
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Bench Rest House

Have you ever planned all week for that big Saturday Shoot, only to have the weather conditions turn intolerable when the big day arrives?

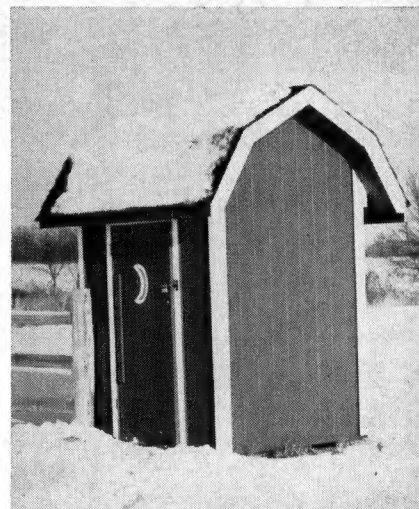
This Bench Rest House is just the answer for the guy who wants to shoot 365 days a year.

It all started when we received a duplicating milling machine at the shop which had a crate that was built for export; and man, when I say it was built, it was built. It was just too good to throw away. The inside dimensions are: 5'-6" long, 46" width, 5'-6" height. With some scrap lumber, I added a bench on the inside, sawed out two windows and a door. Moved it out to the range and it served its purpose the first year, but it didn't look too good. Matter of fact, my wife was always referring to it as a shanty. So last summer I added a roof, nailed on some masonite barn siding, found some 1/4" plexiglass at the junk yard, cut some grooves in some 2 x 4's so the plexiglass would slide in them and nailed them to the inside.



For the front window, I saber-sawed out a slot, so the rifle muzzle would protrude outdoors, added 10' of fence to the front so one of my kids couldn't walk in front of the gun without the shooter seeing them.

Bought me a little stove to keep warm, but found out fast that was for the birds. When the wind was blowing in the wrong direction, the heat waves on a 24x scope would make the target look like it was 100°



in August. After trying it without heat, I found if I dressed warmly it would take 2½ hours before I started to feel the cold.

If I were going to build one from scratch, I would add another foot to the length. Reason for this is, when cleaning the barrel I have to stick the barrel out the small window in front to get the cleaning rod in the barrel. I would also add another window in the back for more ventilation in the summer and make the height 6' so I could stand up straight.

I will never forget, after I just gave it the final coat of paint and was standing back admiring it with my wife, I asked her what she thought of it now. Her answer, "NOW IT LOOKS LIKE AN outhouse." That did it. I got my saber saw and cut a 1/2 moon in the door.

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The Rifleman's Corner

By GARY L. ANDERSON

The Anatomy of Firing a Shot

PART II

This is the second part of a two part article on perhaps the most complicated aspect of shooting, the act of firing a shot. You are invited to refer back to last month's article and to the illustration accompanying it. You are also invited to communicate your critical evaluations and personal thoughts on this initial attempt to articulate all of the processes involved in the firing of a shot as an integral, inseparable unit. Last month's article discussed the dynamic or active processes in firing the shot — aiming, breathing, muscle control and trigger control — which supply information to the shooter's brain and which also take their directions from this center of concentration. This month's article discusses the passive sources of information and how all of these processes fit into a unit — the firing of a single shot.



In addition to the active sources of information, the muscles and aiming, there are also certain **information processes** (illust. 4) which inform the decision making process involved in the firing of a shot. The habits of the shooter that have come from repeating these actions in training often direct the body in assuming the position and in controlling the hold in the easier position without the active imposition of concentration and decision. This training factor assures the exact performance of many details that might be forgotten or changed in the heat of competition.

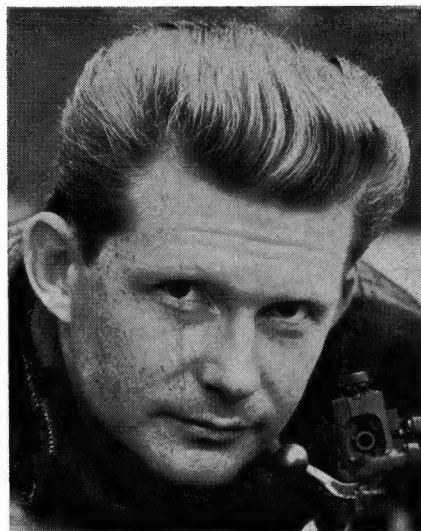
While he is concentrating, the shooter's memory informs the decision making process about how successful decisions concerning certain recurring data from the dynamic processes were made in the past. Memory or experience always helps to prepare a shooter to properly evaluate the recurrent actions of his rifle and body. The shooter, for example, might remember that a certain muscle sensation had previously preceded a shot that moved away from the hold just as the shot was released.

A third information process is those factors external to the physiological process of firing a shot that can affect the bullet after it leaves the barrel or can alter the information furnished by aiming. The most important are light and wind

changes. The shooter must adapt his concentration sequence so that he can evaluate the wind just as he begins his hold. In prone or kneeling where the hold is better and the requirement for intense concentration is less, he must also be able to have the non-aiming eye become an additional source of information on wind during the entire hold. If it supplies information indicating a wind change the decision must be to stop the hold and to make a correction or wait for a more favorable wind condition before starting a new hold. A wind check should also be part of the analysis that follows immediately after every shot.

The concentration sequence itself begins with a decision to pick up the rifle. Already certain evaluations have been made based on information about whether the muscles have sufficiently rested from the last shot and whether the wind is good. Once a decision to begin is made, habit should direct the movements of the body in picking up the rifle.

Once the rifle is on the shoulder, the aiming process begins to furnish information about what movements to make to bring the rifle onto the target. Most shooters habitually settle the rifle onto the target from the same direction. As the rifle



GARY L. ANDERSON

settles onto the target, the memory indicates certain position check points that must be checked. In standing the shooter may, for instance, check to see that his left elbow is under the rifle, that his hip is under the elbow and his left arm is totally relaxed. All positions have check points like this whether they are consciously or habitually regulated. If something is not "right", a decision must be made to re-position an elbow or hand or butt-plate to correct the position.

The exact centering of the front sight on the bull is informed both by aiming and how the muscles feel. Generally, the left arm must be completely relaxed while certain other muscles must have specific amounts

(Next page please)

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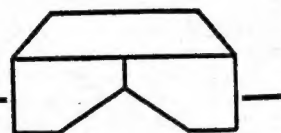
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of tension in order for the position to be "right". Muscle tension must be regulated before the rifle can be centered. Each position has either a natural or artificial center of aim. In this stage of the concentration sequence, the shooter may have to make minute adjustments of his entire position to make sure the center of aim is on the ten ring. This is the longest and, in some respects, the most critical period of the firing of a shot, because the quality of the hold is directly related to how well the ready position is prepared. Every precaution should be taken to make sure the body is capable of holding the rifle as still as possible, that the hold is centered, and that no muscle actions will magnify or divert the hold. If the center of aim is not on the ten ring, it is possible that the rifle will react with a movement towards the real center of aim sometime during the hold or trigger release. The last check on the rifle's center of aim must be made after the breath is held and the hold is started. If the front sight is not centered, the hold must be interrupted and the shooter must return to the centering process to make the small position adjustment required. Having the will to repeat all or part of the process of preparing the ready position or orienting the center of aim is vital to shooting success.

Once the ready position is prepared and the hold is started, the shooter must still wait four or five seconds for some muscles, which were actively moving during the position preparation, to reduce their activity and for others to gain full control over the hold. This waiting period is the time when the final check is made on how well the front sight is centered on the bull.

There is a period when the hold is best. Most of the time the best hold

will begin four or five seconds after the hold is started or just after the so-called waiting period. The period of best hold can last from one to perhaps eight seconds. It is during this time that the trigger control decision and release should be made.

During both the preliminary and best hold phases of the hold, the marksman's concentration is on accepting information about the hold from both the dynamic and information processes that are concurrent with the firing of the shot, on making decisions which transform this information into directions, and on transmitting these directions back to the dynamic processes for execution. Ideally, this whole process should be so well reinforced for the trained marksman that the acceptance of information and the execution of directions is automatic and not an act of which the shooter is aware. His concentration is thus on the composite process of decision.

Sometime during the period of best hold one of the decisions that must be made is a trigger action decision. In the continuous squeeze method of pulling the trigger this decision is merely one of several decisions which emanate from the center of concentration while the shooter continues to concentrate on the process of controlling and evaluating his hold, thus keeping open the possibility of a hold rejection even when the trigger is being pressed. In the timed release and interrupted squeeze methods, the process of concentration is suddenly switched to pressing the trigger as smoothly as possible. In the interrupted squeeze, the concentration switches back and forth between hold and trigger control two to four times before the trigger is released.

Either through habit formation or through continued concentration on

the hold, the control of the hold must be maintained while the trigger is released and during the shot development time. The shot development time includes the lock time and the barrel time of the bullet. This continuation of the concentration sequence is called follow-through. Continued concentration on hold control should be broken by the report which can be heard only after the bullet has left the barrel. This period is just a fraction of a second long, but it is still possible to interrupt control of the hold between the release of the trigger and the release of the shot and to divert the rifle from its good hold. As soon as the shot is released, the decision to take the rifle down can be made. There is no need for an exaggerated follow-through.

At the last instant before the shot is released, the shooter must form a sharp mental image of the sight picture. The fixation of the last sight picture is stimulated by the release of the shot and the conclusion of the follow-through. This is calling the shot. In addition to calling the shot, some mental notes should be made about the last hold movements and how the muscles felt just before the shot was released, as well as about how the trigger was released. The call and these mental notes about the condition of the shooter and his position begin the last phase of the concentration sequence — analysis. Before the analysis begins, light, wind and the location of the shot should be checked. All of these factors are then correlated to explain why the shot went where it did. The shooter must decide whether he correctly evaluated all his sources of information and made the proper decisions and executions. This analysis becomes part of his memory which will inform the decision making process on subsequent shots.

The whole process of firing a shot is focused on the concentration sequence. Previously, we thought it was sufficient if the shooter simply concentrated on his hold. This analysis will have been useful if it has shown that the requirement to concentrate is really a complicated, dynamic process which involves both accepting many sources of information and giving directions to several of these same processes. Our efforts to understand and improve shooting are leading first to a realization of its complexity. If we can correctly understand and describe the firing of a shot, we can more easily improve this sequence and its component processes.

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More On the Gun Control Act

OF 1968

In the December, 1969 issue of **Precision Shooting** we discussed some of the injustices and burdens of the Gun Control Act of 1968 on law-abiding citizens — not upon criminals.

Since then I have had the pleasure of working with others of the California Rifle & Pistol Association in the preparation of a Resolution urging the repeal of this Act.

Let me share it with you, and I hope all of you will write your Congressman, protesting this Gun Control Act of 1968 and asking for its repeal. We should re-enact the Federal and National Firearms Acts with which the shooting sports survived for many years.



**California Rifle & Pistol
Association, Inc.
5711 Trinet Avenue
Garden Grove, California 92641**

RESOLUTION ON THE REPEAL OF THE GUN CONTROL ACT OF 1968

WHEREAS the Gun Control Act of 1968 imposes substantial and oppressive burdens on law-respecting citizens:

- (1) By prohibitions on certain of their traditional and legitimate uses of the United States mail;
- (2) By restrictions on mail order trade between States so as to virtually eliminate the economies heretofore available to consumers in the purchase and use of firearms for lawful and beneficial purposes;
- (3) By restrictions on, and in some cases the elimination of, the importation in foreign trade of firearms for lawful and beneficial purposes, thereby creating in this country a new protected industry unfairly detrimental to the law-respecting American consumer;

By **HARLON CARTER**
Former President of the NRA
P.O. Box 3035
San Pedro, Calif. 90731

- (4) By imposing on law-respecting citizens numerous procedures, additional costs and inconveniences which cannot be thought, by reasonable men, to be applicable to law violators or others who may be expected to become law violators;
- (5) By denying to law-respecting citizens the lawful full use and disposal of property they already legally possess, except after they have made application to a government official who may or may not grant same, thus assailing one of the fundamental citadels of reason and justice which, to destroy, is to jeopardize the whole fabric of our constitutional guarantees as handed to us by our forefathers;
- (6) By its failure to define the difference between a legitimate sportsman and a potential criminal, it inevitably suggests, and in some minds establishes, the concept that gun owners are suspect as to the lawful nature of their intentions — a concept impossible for law-respecting and free men to accept; and

WHEREAS none of these aforementioned prohibitions, restrictions, procedures, costs and inconveniences affecting the rights of law-respecting citizens have shown any evidence of controlling or limiting the use of firearms in crime nor shown any evidence of decreasing crime in this country; and

WHEREAS millions of dollars and hundreds of new government employees have been requested for an enlarged and reorganized instrument of a powerful and centralized government for the purpose of going deeper into the legitimate affairs of law-respecting citizens, imposing upon them prohibitions, limitations, inconveniences and more taxes in order to watch out for, to inspect and to supervise the purchase and use of firearms for lawful and beneficial purposes;



Harlon Carter

NOW THEREFORE BE IT RESOLVED that the California Rifle & Pistol Association, through its duly elected representatives and appointees at Fresno, California on the 10th day of January, 1970, is most strongly opposed to the Gun Control Act of 1968;

BE IT FURTHER RESOLVED, as a moderate and reasonable position of this Association, that we do endorse and we do recommend for endorsement to all organizations of sportsmen in the State of California HR. 8822, introduced in the Congress by Congressman Tom Steed of Oklahoma, co-sponsored by Congressmen Carl Albert and Ed Edmondson, also of Oklahoma, to repeal the Gun Control Act of 1968 and to re-enact in lieu thereof the Federal and National Firearms Acts which have existed for many years;

BE IT FURTHER RESOLVED that copies of this resolution shall be appropriately distributed and especially distributed to the Members of the House of Representatives and the United States Senate from the State of California, with our strongest recommendation that they support HR. 8822.

/s/ Eugene D. Anderson
President, California Rifle
& Pistol Association

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1970 Shooting Schedule

March 14, Saturday — 10:00 A.M. (non reg.) 100 yards. Heavy Varmint, Light Varmint and Sporter.

April 11, Saturday — 10:00 A.M. (non reg.) 200 yards. Heavy Varmint, Light Varmint and Sporter.

May 2, Saturday—10:00 A.M. (reg.) 300 meters. Heavy Varmint, Light Varmint and Sporter. Handgun 100 yards, championship stage.

May 23, Saturday — 10:00 A.M. (reg.) NW Regional Championship.

Benchrest Rifle 100 and 200 yards. Heavy Varmint Rifle 200 yards.

May 24, Sunday—10:00 A.M. (reg.) NW Regional Championship. Heavy Varmint Rifle 100 yards. Light Varmint Rifle 100 and 200 yards.

June 20, Saturday — 10:00 A.M. (reg.) 200 yards. Heavy Varmint, Light Varmint and Sporter. Handgun, final championship stage 100 yards.

June 21, Sunday—10:00 A.M. (reg.) 300 meters. Heavy Varmint, Light Varmint and Sporter.

July 18, Saturday—10:00 A.M. (non reg.) 200 yards. Heavy Varmint,

Light Varmint and Sporter. Handgun shooting (time permitting).

Aug. 15, Saturday — 10:00 A.M. (reg.) Washington State Championship. Benchrest Rifle 100 and 200 yards. Heavy Varmint Rifle 200 yards.

Aug. 16, Sunday—10:00 A.M. (reg.) Wash. State Championship. Heavy Varmint and Light Varmint 100 yards. Light Varmint Rifle 200 yards.

Sept. 12, Saturday—10:00 A.M. (non reg.) 100 yards. Hunter Rifle 5-5 shot matches for score. Handgun shooting.

Sept. 26, Saturday — 10:00 A.M. "Flybustin" Shoot 100 yards. Any Rifle not over 13½ pounds. Hunting Handgun for the "Yum Yum" award.

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3. No bench rotation.
4. All matches held at the Puget Sound Benchrest Rifle Club range.
5. NBRSA rules and rifle specifications will apply except for no hunter rifle competitor classifications.
6. Hunting Handgun — Max. barrel length 12", overall gun length 19" exclusive of scope.

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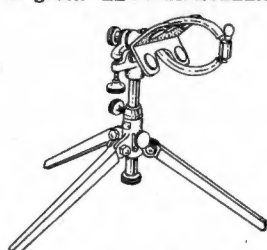
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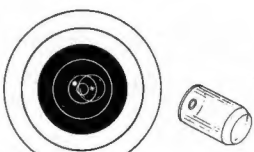
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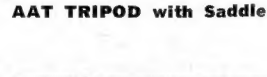
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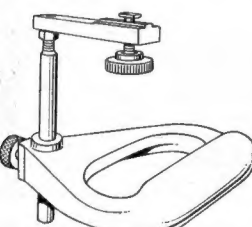
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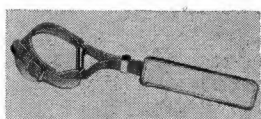
AAT TRIPOD with Saddle



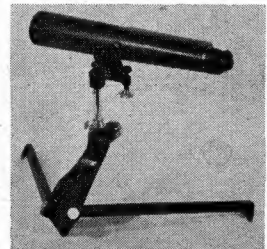
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A Quantitative Look at

"OVERCASE CAPACITY"

By A. H. ANGERMAN

While not an authority on ballistics, the subject known preferably as "overcase" rather than overbore capacity has interested me because the term may have a little more practical meaning than it has ever been given credit for. Moreover it is obvious that many shooters, bench rest, big bore and wildcatters alike have some appreciation of the word, particularly as it relates to general rifle performance, kick, precision and barrel life.

"Overbore capacity" is generally defined as some sort of mysterious term that refers to a cartridge case that is too big compared to the bullet diameter it propels. In other words it relates case volume to bore diameter, case volume to area of bore or to the total volume of hot gases to the size of the hole through which these gases must pass.

Case volumes are generally determined by weighing an empty case with fired primer, filling it with water to the base of the neck and reweighing. The difference in weight is the effective case volume in grains of water. Dividing by 253 converts this weight into a decimal fraction of a cubic inch.

If overcase capacity is defined as case capacity (in cubic inches) divided by the cross sectional area of the bullet (in square inches) we arrive at a figure which we will call the "overcase capacity index."

The cross sectional area of any bullet (in decimal fraction of a square inch) is $.785 \times \text{bullet diameter} \times \text{bullet diameter}$ — which is the same as πr^2 , the formula for figuring the area of a circle, in this case the area of the bullet.

Having covered the definition of overcase capacity and how to calculate it, we set up everything conveniently in TABLE 1.

To determine the overcase capacity index of your particular caliber, determine case volume in grains of water (not powder) up to the base of the neck and line up this figure under the proper bullet diameter column in the table. If you don't know what the volume of your case is in grains of water, look it up in *Shooting Times* magazine, February 1967, page 18 or in the fourth edition of the *Handloader's Digest*, page 38. Mr. Waters did a lot of work and a fine job in determining these figures.

Now that we have a neat table of overcase capacity indices, so what? For those interested the indices will advise what calibers are undercased, about normal, overcased or inefficient. The figures will also advise the wildcatter if he is over or under and in addition throw a little light on barrel life. The higher the overcase index of your caliber the more inefficient it will be with respect to burning the powder completely. Also, the higher the overcase capacity in-

dex, the faster we can expect the throat and barrel of the gun to burn out. This follows because there is a greater volume of red hot gases pouring through the bore of a high index caliber than for a caliber with low overcase index.

We will now stick out our swan-like neck and cite some figures for cartridges which are undercased, on the borderline, or overcased. Here's where we get into hot water, as all readers and shooters will not agree

(Next page please)

TABLE 1
OVERCASE CAPACITY INDEX

CASE VOLUME IN GRAINS OF		BULLET DIAMETER									
WATER	0.14	0.17	0.20	0.22	0.24	0.25	0.26	0.27	0.28	0.30	
10	2.6										
12	3.1										
14	3.6	2.4									
16	4.1	2.8									
18	4.6	3.1									
20	5.1	3.5	2.5								
22	5.7	3.8	2.8								
24	6.2	4.2	3.0	2.5							
26	6.7	4.5	3.3	2.7							
28	7.2	4.9	3.5	2.9							
30	7.7	5.2	3.8	3.1	2.6						
32	8.2	5.6	4.0	3.3	2.8						
34	8.7	5.9	4.3	3.5	3.0	2.7					
36	9.3	6.3	4.5	3.8	3.1	2.9					
38	9.8	6.6	4.8	4.0	3.3	3.1	2.8				
40		7.0	5.0	4.2	3.5	3.2	3.0				
42		7.3	5.3	4.4	3.7	3.4	3.1	2.9			
44		7.7	5.5	4.6	3.8	3.5	3.3	3.0			
46			5.8	4.8	4.0	3.7	3.4	3.2	3.0		
48			6.0	5.0	4.2	3.9	3.6	3.3	3.1		
50			6.3	5.2	4.4	4.0	3.7	3.5	3.2	2.8	
52				5.4	4.6	4.2	3.9	3.6	3.3	2.9	
54				5.6	4.7	4.4	4.0	3.7	3.5	3.0	
56				5.8	4.9	4.5	4.2	3.9	3.6	3.1	
58					5.1	4.7	4.3	4.0	3.7	3.2	
60					5.2	4.8	4.5	4.1	3.9	3.4	
62						5.0	4.6	4.3	4.0	3.5	
64						5.2	4.8	4.4	4.2	3.6	
66							4.9	4.6	4.2	3.7	
68							5.1	4.7	4.4	3.8	
70								4.8	4.5	3.9	
72								5.0	4.6	4.0	
74									4.8	4.1	
76									4.9	4.3	
78										4.4	
80										4.5	
82										4.6	
84										4.7	
86										4.8	

Overcase Capacity Index = $\frac{\text{Case Volume (cu. in.)}}{\text{Cross Sectional Area Of Bullet (sq. in.)}}$

with the classifications shown in TABLE 2.

**TABLE 2
UNDERCASED**

Caliber	Case Volume- Grains Water	Index
.14 Bee	14.8	3.8
.17 Hornet	11.4	2.3
.20-222	23.8	3.0
.20-222 Mag.	28.8	3.6
.222 Rem.	23.8	2.5
.219 Wasp	27.0	2.8
.224 Weath.	35.8	3.8
.250 Savage	42.0	3.4
308 Winch.	49.8	2.8
30-06	61.3	3.4

BORDERLINE

Caliber	Case Volume- Grains Water	Index
.17-222	23.8	4.2
.20-225 Weath.	35.8	4.5
225 Winch.	38.0	4.0
220 Swift	44.6	4.7
22-250	42.1	4.4
243 Winch.	50.6	4.5
6mm Rem.	51.2	4.5
257 Roberts	53.7	4.4
270 Winch.	62.9	4.4
300 H&H Mag.	80.0	4.5

OVERCASED

Caliber	Case Volume- Grains Water	Index
.14-222	23.8	6.2
.17-223	28.3	4.9
.17-222 Mag.	28.8	5.0
.17-225 Winch.	38.0	6.6
.20-22-250	42.1	5.3
25-06	61.3	4.9
264 Win. Mag.	79.8	6.0
300 Weath. Mag.	91.7	5.1
6.5mm Rem. Mag.	66.1	4.9
7mm Rem. Mag.	79.9	5.1

Note: Grains of case volume should not be confused with powder load. We are not talking about loads here.

If the index of a case-bullet combination is about 3.8 or under we will consider it to have undercase capacity; if the index is 4.0 to about 4.5 we're on the borderline and if the index runs about 4.9 or over we have overcase capacity.

Cases with .32, .35, .38, or .44 caliber bullets have undercase capacity even if their volumes are as high as 90 grains of water. In these calibers recoil would be so great that I doubt if most shooters would really enjoy shooting, except perhaps Mr. Keith.

Note that all of the popular precision bench rest calibers have undercase capacity.

Caliber	Case Volume Grains Water	Index
.222 Rem.	23.8	2.5
.222 Mag.	28.8	3.0
6x47	28.8	2.6
6-22-250	42.1	3.7
308 Winch.	49.8	2.8
6-225 Winch.	38.0	3.3

Hot 22 caliber varmint rifle calibers are on the borderline, while all smallbore calibers are extremely undercase capacity.

It was of interest to check out some of the assorted wildcats and other cartridges currently used for 1000 yard bench rest shooting. Here we are witnessing somewhat of a show-down amongst large case capacity cartridges for long range bench rest supremacy similar to that observed during the early days of 100 and 200 yard bench rest shooting when a large assortment finally boiled down to the .219 Don., .222 Rem. and later the 308 Winch. calibers. I'll be willing to bet that the eventual 1000 yard bench rest cartridge-bullet combinations will not have overcase capacity as defined in this article. TABLE 3 lists the most popular big cased items in order of their index.

**TABLE 3
CURRENT 1000 YARD
BENCH REST CALIBERS**

Caliber	Case Volume	Index
308 Winch.	49.8	2.8
30-06	61.3	3.4
30-338 Winch. Mag.	78.6	4.4
308 Norma Mag.	81.2	4.5
300 Winch. Mag.	83.6	4.7
25-06	61.3	4.9
7mm Rem. Mag.	79.9	5.1
6mm 284 Winch.	62.4	5.3
7mm 300 Weath. Mag.	91.7	5.9
264 Winch. Mag.	79.8	6.0
30-378 Weath. Mag. (113)		6.4
6.5mm 300 Weath. Mag.	91.7	6.8

The final discussion of overcase capacity will relate to barrel life. Here we have little data to go with, as published articles that contain quantitative information are almost non-existent. We read or hear of such and such a caliber burning out after so many rounds, but direct, scientific comparisons under similar conditions of fire for a variety of cases and loads have never been written up to my knowledge. So we'll record some guesses that have been made. TABLE 4 attempts to correlate overcase index with barrel life.

TABLE 4

Caliber	Index	Approximate Barrel Life—Rounds	
		Precision Shooting	Hunting Accuracy
22 Long Rifle	0.4	10,000	20,000
222 Rem.	2.5	3,500	7,000
6x47	2.5	4,000	----
308 Winch.	2.8	3,500	8,000
219 Don.	2.8	4,000	----
30-06	3.4	----	8,000
270	4.4	----	3,500
22-250	4.4	1,000	2,000
243 or 244	4.5	----	2,000
300 Winch. Mag.	4.7	1,100	2,000
7mm Mag.	5.1	600	1,000

Now please don't scalp me because I put these figures into print. They may not agree with your guesses, but remember all of the numbers are

guesses and I suppose the only people qualified to discuss barrel life are barrel makers.

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'69 Bench Rest Varmint Nationals—

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Each year, sports fans across the country look to the World Series and the Super Bowl to settle the matters of baseball and football superiority, respectively. Accordingly, in the most active phase of bench rest shooting, the Varmint classes, there remains the Nationals each year to establish the King of the Hill for the following year. Even more, in addition to the establishment of individual shooters as being of championship caliber, the bench resters keep tabs on the winning equipment to a degree unmatched in any similar field of endeavor. The matter of record keeping has been followed religiously for many years by the Clan, to the point where the typewritten report that is mailed to every competitor a month or so after each major match would be regarded as being almost worthless without quite a detailed breakdown of all competitors' equipment.

The 1969 Varmint Nationals were held at the South Creek Rod & Gun Club, Fassett, Pa. To the uninitiated, not familiar with the thriving metropolis of Fassett (population unknown; Rand McNally doesn't list it in their latest opus), it's just south of Elmira, N. Y. South Creek was host to the largest Nationals in history; over 160 competitors came from all over the United States to attempt to shoot their way into the record books. During the four days of the match, the grim gods that watch over shooters were apparently angry over something or other; everything but the kitchen sink fell from the skies, and turned the match site into both a shooting match and what the army would term a 96 hour survival problem. During this time, the sophisticated riflemen gathered there fired approximately 21,200 shots "for record." It is the excellent record of this shoot, compiled by the South Creek people, and mailed to each competitor that we propose to treat with here, and review for the purpose of determining exactly what equipment is indicated if one is to

go to the 1970 Nationals and be in serious contention.

First class fired was Light Varmint, 10 1/2 lb. weight limit for rifle and scope combined. In each class the high-scoring twenty are awarded the coveted "Top 20" patches, and it is the equipment of this top 20 that we shall review, to see if we can determine trends or even irrefutable logic.

In the matter of actions, the very heart of any rifle, 9 of the top 20 used Remington actions of one type or other. Shilen actions were used by 3, Hart actions by 3, Culver actions by one, and 3 chose to use their own creations.

The barrels fell into a simpler division; 16 chose Hart, 3 stayed with Remington, and one sturdy type chose to make his own.

The assembling gunsmith column shows that 6 competitors chose to assemble their own smoke pole, 4 used the talents of the Harts, 3 stayed with Dave Hall of Warsaw, N. Y., 2 felt that Ross Sherman of Dryden, N. Y. was their best bet, and 2 elected Homer Culver of Arlington, Va. Some of the competitors, 3 to be

exact, felt that Remington still made a rifle that a man could trust.

The caliber of the rifle is not without its points of contention. The .222 family (standard .222, .222 1/2, and .222 Mag) was used by 9 of the top 20; 3 chose the .308 to do battle with; the Wildcat 6x47 (.222 Mag necked up to 6mm.) was used by 4 others; and 3 shooters felt that an inconclusive description of "6mm" was good enough. The final member of the 20 elect went a little further, and described his Wildcat as a .225 necked up to 6mm.

The Sporter class carries the same 10 1/2 lb. weight limit as the light varmit class, but carries a requirement that the caliber be at least .23 in diameter; this rules out the super accurate .22's. Theoretically this leaves the field of caliber selection wide open, but as a matter of hard fact, the field is almost exclusively dominated by the 6mm and the .308. The 6mm family is usually represented by the 6x47 (.222 Mag opened to .243 neck) or one of the variants of the 6mm International (.250 Savage shortened, necked down to .243). Advantages of the 6mm are light recoil and favorable loading density of the case (powder reaches nearly to base of bullet); disadvantages are the lack of a really good factory bullet, and wind-sensitivity. The .308 Winchester has the disadvantage of heavy recoil, but the advantage of superb factory bullets from Sierra and Horn-
(Next page please)

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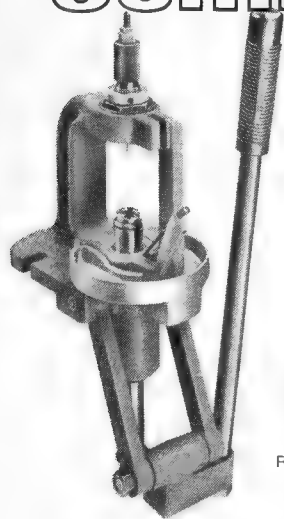
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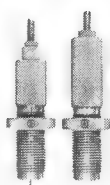
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ady, bullets that use their 168 grain weight to buck the wind far better than the bullets of lesser calibers.

Actions once again showed the high regard in which bench resters hold the Remington action; 13 out of the top 20 chose the Bridgeport product. There were two of the no longer manufactured Shilen actions, two Hart actions, one SS&D, one Sherman, and one Benchmaster.

Barrels continued the Hart dominance; there were 14 Harts, 3 Shilens, 2 Remingtons, and one SS&D.

Assembling gunsmith column showed that 3 felt they themselves were the logical man to call on. Of the seventeen remaining, 7 declared the Harts as the assembler, without being specific if they meant the Harts of Nescopeck, Pa. or the Harts of Lafayette, N. Y. This left ten to account for; Dave Hall of Warsaw, N. Y. made 4; 2 used factory Remingtons, and finally one each for Shilen, SS&D, Spencer and Culver.

Caliber selection listing had 5 of the top 20 using .308, and 12 went to the 6x47. This left 2 users of the 6mm in variants of the 6 m.m. International. There remains position #6 of the top 20 to explain — or attempt to — he used a unique 6.5x250, with a 115 GR bullet of his own manufacture. Lest this be interpreted as a trend, be aware that this was the only shooter in the top 85 in this class who successfully ignored the unwritten rule of selection for the Sporter class caliber, "308 or 6mm."

The Heavy Varmint class, with the 13 1/2 lb. weight limit is the most popular class in bench rest shooting today. The Nationals were no exception; 163 shooters turned out to pursue the most coveted class trophy of the match. Because of the additional three pounds weight allowed in this class, shooters' results over the last few years have far outstripped the two lighter classes. Conditions at Fassett this year were not conducive to record setting, but a glance at winning aggregates shows how effectively those additional three pounds are put to use: an aggregate of .500 (one half inch average group) would have won the Sporter class this year; it would only have justified thirty-fifth place in Heavy Varmint class.

Actions used by the top 20 guns continued the trends obvious in the two previous classes; there were 9 Remingtons, 2 Harts, 2 Culvers, 5 Shilens, 1 Weber and 1 Kempfer.

Barrels likewise confirmed what was obvious earlier, even more dra-

matically, as 17 Harts and 3 Shilens monopolized the top 20.

Assembling gunsmith column showed 7 credited to the two Harts, 1 to G. Dick, 2 to Homer Culver, 3 were the owner's handiwork, 2 by Ross Sherman, 1 by Dave Hall, 3 by Ed Shilen and 1 by Ted Boughton.

Calibers in this class top 20 show a total absence of the 6mm, reflecting a basic common belief among the Clan that the sixes can't shoot with the .222 family for sheer accuracy in good weather, and they can't buck the wind like the .308 shooters when the winds start. There were 4 .308 shooters in the top 20, and 15 who chose the .222 family. The sole exception caused a catch in the throat of bench rest's old timers by using a .219 Donaldson Wasp to win the 100 year stage, and finish third in the class overall.

We will not attempt to reach conclusions for you here on how best to interpret the data in the foregoing. There is no positive formula on how to build a bench rest winner. But the equipment of the "top 20" in each class at this year's Nationals should indicate, to those studying the results, trends among the most accurate group of riflemen the world has ever seen.

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THE GUN CLINIC

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Smallbore Notes

By **HERB HOLLISTER**
Smallbore Technical Editor

I'm no fisherman, but I do know that if you expect to catch fish you have to use bait that appeals to the fish rather than the fisherman. I mean, fish like worms, so while I prefer strawberries myself, I sure don't object to offering worms to the fish. Like I guess I'm not quite sure that the subjects discussed in this monthly column during the past year have been the ones the readers want. Mail response has been less than great, and I say again it would help a lot if you would take the time to drop me a line with your comment on the phases of our sport currently under discussion, and/or your suggestions for future articles. I'll sure answer you, and I won't call you a fish either!

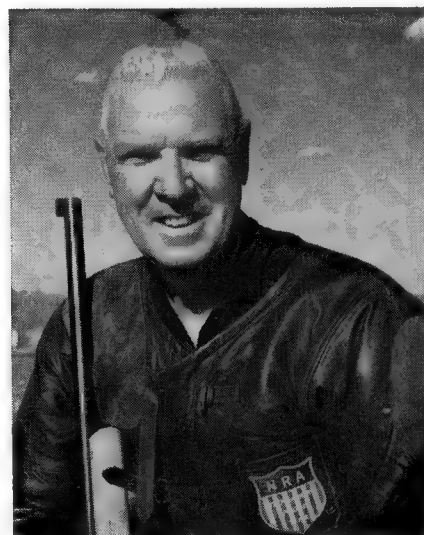
A most welcome card from Ed Lang of Berkeley, California is just in, and will serve as the "starter" for this month's batch of sourdough. Ed writes as follows:

"When I ask smallbore shooters how often they clean their rifles and how they do it, I am told all the way from never to just before each match. I feel that you fellows who are producing those fantastic scores Mrs. Duncan reports each month are doing it properly. Would you either tell me how they care for their rifles or write a column about the care and cleaning of those very accurate smoke poles you punch holes with. Thanks."

Like a lot of other things connected with smallbore shooting, there seems to be no definite clean-cut answer to this question of whether to clean or not to clean. It is true that most of our top competitors do clean regularly when shooting in a tournament, usually after each forty shot match, with many using a pull-thru after each twenty shot stage. I usually follow the practice of cleaning after each match, altho I reckon I do so for a negative reason: I'm just afraid **not** to clean! During practice and testing sessions I never clean, and sometimes fire three or four hundred rounds in a few hours without any loss of accuracy. I do, however, scrub that barrel out good when I return home from the range.

In England the emphasis seems to be on **not** cleaning. Such consistently fine shooters as Arthur Skinner, John Hall and Bill Godwin **never** clean their bores, and I think Skinner's favorite BSA has not been cleaned in several years. At the Eley ammunition plant in Birmingham, several test barrels are in use constantly, and are never cleaned except in the chamber area where beeswax and tallow and other crud builds up. So — it's a puzzlement, isn't it? For what it may be worth, here is the cleaning procedure I use: while the barrel is still warm from firing, I squirt a shot of liquid cleaning solution into the chamber and go thru from the rear with a dry patch. If the weather is hot and humid I then use a bronze brush dipped in cleaning solution, pulling it backwards from the muzzle to prevent squeezing the goop down into the loading platform and trigger. One or two passes with a clean dry patch finishes the job, except for a careful cleaning of the barrel face, extractor slots and loading platform, as well as the bolt face and extractors. Now I can just see a lot of my "old maid" friends shaking their heads over this, for most of them have their own ritual for cleaning and their own pet cleaning fluids and naturally there is no other system quite as good! So again I quote my favorite poet, "There are six and twenty ways of constructing tribal lays, and every single one of them is right."

On another subject a letter from Dave Ross of Cambridge, Mass., is worthy of attention. Dave is one of the very best of the Fort Benning

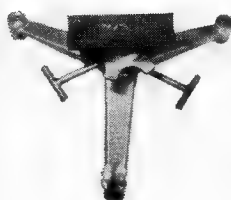


Herb Hollister

grads. Besides being a top shooter himself, Dave's wife Ellen is one of our best competitors on the distaff side, so it behooves him to think well and often about our sport. Here is an excerpt from Dave's letter:

"Now let me turn to the subject of your last few P.S. articles. I think I agree with almost everything that's been said, but would like to lay great emphasis on one point. It has been my experience that many shooters, myself included, at times become so involved with whether or not they have doped the wind correctly, that they are indecisive as they execute the shot — either overholding while the conditions change on the range, or thru lack of concentration on the shot execution itself they muff what was potentially a good shot. Personally I feel that once one has made the decision that the conditions are correct for the next shot then the more quickly one can execute a technically correct shot the better. All too often we overhold while doubts run thru our mind as to the wisdom of our decision to fire at the particular moment while in the meantime our vision deteriorates and our con-

(Next page please)



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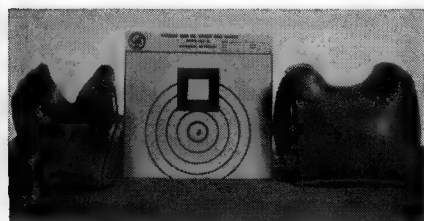
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ditions change. But even if our conditions do not change and if we are blessed with eyes which can see a good clear sight picture for more than a few seconds, I am convinced that, on average, a shot delivered while the shooter harbors doubts as to the wisdom of the shot will be a poorer shot than one delivered when the shooter is fully confident of the outcome. This is not to say that one should not hold up for an expected condition change or for a poor sight picture, they should immediately stop the execution. However, lack of self-confidence on any shot is not a luxury which the champion can afford, and any would-be champion must banish any such self doubt from the mind."

I think Dave makes a good point, and in normal conditions it is essential to execute the shot promptly and with confidence after the decision is made. Unfortunately, we all get caught in situations at times that are not normal, and with the wind trying its devilish best to blow us clear off the line we are forced to fire at least some of our shots purely in fear. It is then that our background of experience has to take over and help us scramble out of the mess. If we have the good luck to come out of it with a good score, we are apt to walk away with a smug expression like the cat that just "et" the canary, but if disaster wipes us out, then we complain that it was purely a lottery and not much fun. So I guess I'm saying that smallbore shooters are human after all!



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1000 YARD CHATTER

Dear Mr. Lynn:

I read with interest your article on 1000 yard bench rest shooting, which appeared in the October issue 1969 of Precision Shooting.

I shot for about 10 years at Bisley at every range from 200 to 1200 yards, in the latter ranges using the now obsolete back-position match rifle, which was favored for so many years by British shooters.

I anticipate returning to Great Britain in 1971 to compete at the Imperial meeting in the long range matches; i.e. from 900 to 1200 yards. It now appears that the British National Rifle Association will authorize any rifle of any caliber with any sights providing that it is supported by the shooter; i.e. it may be used prone or as a back-position match rifle.

For the first time there is, therefore, some choice in equipment in that the N.R.A. is no longer wedded to the 303 Mark VII British service cartridge.

This opens up all sorts of interesting possibilities concerning the type of rifle which might be used and the specific caliber. Should you have any comments regarding suitable combinations of rifles and cartridges, especially for the ultra-long 1200 yard matches, I would very much appreciate hearing from you. It may be that others in your 1000 yard bench rest club would also have some comments to make, and perhaps you could put me in touch with them since this might well be an opportunity to demonstrate American arms and ammunition at a European competition.

Thank you.

Brian King, M.D.

* * *

Dear Dr. King:

Thank you for your letter. I am pleased to advise you but wish to qualify same as coming from both observation and experience rather than personal experience alone. My own rifle is a 7MM Mag. that never won anything in a dozen 1000 yd. matches. The next rifle will be built on more experience, both actual and vicarious.

I feel it is a waste of time to enter into serious competition without a barrel built by C. R. & P. J. Hart of Hart Rifle Barrels, Inc. of Lafayette, New York. Also, the many years of research poured into the 30 caliber bullet would seem to dictate this caliber. I have seen very favorable results from the 308 Norma Mag., 1 in 12 twist, shooting the 190 grain Matching between 2800 to 2900 F.P.S. IMR 4350 is the most consistent powder from lot to lot. Try between 67 and 69 grains with the 190 grain bullet.

The finest action available is made by R. W. Hart and Son in Nescopeck, Pa. The #4 action with sleeve and 2 oz. trigger is most favored for the magnums and weighs about 6 lbs. Since you will be shooting from the prone position, weight will be an important factor and probably should not exceed 15 to 17 lbs., scope in-

cluded. I would sacrifice barrel weight in favor of the sleeve since I have had the best results by keeping the scope off the barrel. Mr. Hart can taper the barrel to reduce weight and maintain stiffness without any discernable sacrifice to accuracy from the prone position.

Scope should be the Redfield 3200 or Lyman Supertargetspot of at least 15 power.

The 1000 yd. match results for 1969 have shown the 6.5 x 300 W.W.H. to be another very fine long range cartridge. But one word of caution, this cartridge was developed around the 140 grain Norma, steel jacket, boat-tail bullet with a 1 in 8 twist barrel. Should anything happen to jeopardize the availability of this bullet in this country the 6.5 owners are in serious trouble as a cupro-nickel jacket is subjected to high torque in the 8 twist barrel and accuracy is seriously affected. Barrel life is shorter than the 30's due to the over-bore condition.

Finally, I am forwarding copies of your letter to the officers of the Original Pennsylvania 1000 Yard Benchrest Club, Inc. for any advice they may have.

If there are any further questions, please do not hesitate to contact me as I am acquainted with many very knowledgeable shooters.

Good Shooting.

Carl U. Lynn

TRADING POST

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Letters

TO and FROM

M. H. WALKER
Technical Editor

40XB — 17 CAL?

Do you have any reason to believe that the Remington Model 40XB will become available in the .17 in the near future?

I'm contemplating getting a rifle in that caliber for woodchuck hunting and I like the 40XB I now have so well that I'd prefer to wait a bit for one in the .17 caliber if it is likely to become available.

If no likelihood exists of a Remington chambering the 40XB for the .17 caliber I could have a Rem. 722, .222 I own rebarreled for the .17 and was thinking of sending it to Shilen for that. Would you suggest 17/222 or 17/223 if that seems to be the way to obtain such a rifle?

Thomas J. Moore
13 Stephen Drive
Glendora, N. J. 08029

* * *

Although the .17 cal. has been the subject of much experimental work, particularly at Ackley's, there is no indication at the present time that it will become a generally available commercial caliber. Certainly it will not be available this year.

If you do have a custom rifle made, it is suggested that the smallest case would produce the best all around results. My own preference is for the .221. You might say that I am not a .17 cal. enthusiast. —M.H.W.

SOUTHPAW IN DISTRESS

While reading through my December issue of Precision Shooting I note your address to write to for information. If you can assist me, just the address or addresses I need added to the bottom of this would be greatly appreciated. I will include a self addressed stamped envelope.

I am left handed and have been corresponding with Monty Kennedy about making a varmint weight Bull Pup, intending to mount either a Rem. scope or a Unertl Vulture scope. I originally thought of using one of two 40X Remingtons that I have but Mr. Kennedy advises that due to direction of ejection, face against loading port, etc., and so I am seeking someone who will make me a left handed single shot bolt action that I could use for above project. I would probably have a medium Hart barrel put on it chambered for 222 Rem. Mag.

Dr. J. R. McGlynn
Soldiers Grove, Wis. 54655

* * *

At the present time I know of only one gunsmith making actions for bench rest rifles in reasonable quantities. This is Robert W. Hart & Son, 401 Montgomery St., Nescopeck, Pa. 18635. However, I doubt that he can be persuaded to make a left hand action.

You might also try John Dewey of S. S. & D. Inc., Clinton Corners, N. Y. 12514 or Ed Shilen, 4510 Harrington Rd., Irving, Texas 75060.

It is also suggested that you look at the Gun Digest Directory of Arms Trade for other possible sources.

—M.H.W.

40X MODIFICATION TALK

Thank you so much for your kind response to my questions. I am taking the liberty of sending this letter to your home address, as at this moment I wouldn't be certain as to



M. H. Walker

which magazine to write you in care of.

I am sorry that Remington can't do the alterations on my 40X. I rather felt it would be like a mother handling her offspring. Be that as it may, my gunsmith cannot do this job for me unless he removes the barrel from the action, which would create too expensive an operation considering the amount of work involved in aligning the barrel and the recoil lug. However, he suggested I contact Griffin & Howe in New York City.

This I did, and talked with a very helpful person who informed me they could do the job, without removing the barrel, and they would shorten and crown the barrel for \$15. I am ready to give them the job to do and I would appreciate some additional information from you first.

My 40X has the heavy barrel, 28"1. Could I cut it as short as the new 40XBR at 20", without any loss of accuracy? It is in cal. .222 Rem. I plan to shorten the forestock in ac-

(Next page please)

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cordance with the shorter barrel, somewhere about half way between the receiver ring and the muzzle. If the fore-end hand stop recess gets in the way, I'll try to match a piece of walnut and plug it up. I don't feel I'll be saving enough weight by hollowing out the fore-end, so I'll leave that be as it is. Do you agree with that? Should I cut the length of pull back to 12"?

Should you feel that any or all of this information would be valuable to publish in your column, please feel free to do so. Only please let me know if it will appear in Precision Shooting, or the Rifle. I'm sure I'm not the only one that's at least a wee bit confused on the "official publication" bit.

Ray Rose

No. 4 Coolidge Avenue
White Plains, N. Y. 10606

* * *

Your January issue of Precision Shooting, which you should receive within the next few days, will answer some of your questions regarding the magazines. The Eastern shooters were not willing to abide by the NBRSA directives and have organized their own shooting organization. This new organization will support Precision Shooting as its periodical and will hold its own championship matches at localities of its choosing.

I will continue to write for Precision Shooting.

If your M/40X barrel is in the same category as the bulk of M/40X barrels, you should be able to cut it back to 20" without damage to the accuracy. In fact, the accuracy may improve with the proper load.

If you are going to try to meet the 10 1/2# weight limit, some modification of the stock will be necessary.

Cutting off the fore-end will reduce weight and improve the appearance with the short barrel. Shortening the buttstock will also reduce weight and make a more handy rifle at the bench. Substituting a wood butt plate for the heavy rubber plate will also reduce weight. Unless your stock is an extremely light piece of wood, recessing of both the butt stock and fore-end will be required. Reshaping the exterior is also desirable. The fore-end can be reduced in weight at the tip and flattened on the bottom for further reductions in weight.

Most bench rest shooters prefer a much lower comb to avoid its interference with ear protectors. In combination with this a general reshaping and reduction in size of the butt stock will help.

The grip length on the M/40X is longer than desirable on a rifle for bench rest shooting only. The width of the comb can be reduced to advantage and the size of the butt plate can be reduced.

It is suggested that you satisfy yourself on the length of the pull. No complaints have been evident on the M/40XBR except from one or two who had not used their rifles long enough to become accustomed to what is really an improvement for pure bench rifles. —M.H.W.

Official Report of the scores fired in the AMERICAN SINGLE SHOT RIFLE ASSOCIATION'S POSTAL MATCH ending December 31, 1969

CLASS I MATCH RESULTS:

The Class I Postal Match consists of five shots on each of two official 25-ring targets for a possible score of 250. Fired at 100 yards from a BENCH REST with ANY center fire .39 or smaller caliber single shot rifle per ASSRA, and ANY SIGHTS. This is the first stage of the Roderick Trophy; second ends June 30, '70:

Jamie Holland, Monett, Mo.—124 - 124—248 x 250 (8 centers). Stevens Pope Special .32-40, 2" Unertl 16X, Pope 200 grs 82:1, Holland lube, B/S, duP 4759 13.6 grs. WT, cork & p/card wads, R2 1/2. Prize: GOLD MEDAL.

Jack Ziegler, Tulsa, Okla.—124 - 124—248 (8 centers but wider shot than Holland). Stevens - Ballard .32-40, 18#, 2" Unertl 20X, Pope 199 grs 1:30, Holland lube, B/S duP 4759 13.6 grs WT, two cork wads, Rem. 2 1/2. Prize: SILVER MEDAL.

Ray M. Bell, Springfield, Mo.—125* - 123—248 (8 centers; * was a .234" group). Pope-Ballard .32-40, 15#, 2" Unertl 24X, Schoyen 196 grs 1:25, Rod #1, B/S, duP 4759 13.6 grs WT, two 1/32" cork, Rem. 2 1/2. Prize: BRONZE MEDAL.

CLASS II MATCH RESULTS:

The Class II Postal Match consists of five shots on each of two official 25-ring targets for a possible of 250. Fired at 100 yards from the BENCH REST with ANY CENTER FIRE .40 or larger caliber single shot rifle/ASSRA, ANY SIGHTS:

Bob Nichols, Monett, Mo.—122 - 125—247 x 250 (7 centers). VanHorne-Ballard .40-Krag cut 1.700" OAL, 2" Unertl 20X, Bev. 335 grs 1:48, own lube, B/S, duP 4759 19.6 grs. WT, 1 cork, R2 1/2. Prize: GOLD MEDAL.

Murray Leyde, Painesville, Ohio—124-118—242. Ballard .40-50BN, 14#, Red. 3200 24X, Ideal 412174 258 grs. 412" 1:25, A-Blube, B/S, duP 4227 19.5 grs WT, Dacron wad, 9 1/2 Rem. Prize: SILVER MEDAL.

Claude E. Roderick, Monett, Mo.—121-120—241. Schoyen - Ballard .40-70 Bal., 22#, 2" Unertl 20X, Bev. 344 grs 1:25, R-1 lube, B/S, duP 4759 19.5 grs WT, 2 cork, Rem. 2 1/2. Prize: BRONZE MEDAL.

25-SHOT GROUP MATCH:

The 25-shot Group Match consists of five shots on each of five (5) official 100-yard BENCH REST Targets at 100 yards BENCH REST for GROUP SIZE ONLY. ANY CALIBER CENTER FIRE single shot rifle in accordance with ASSRA rules and ANY SIGHTS may be used. The SAME RIFLE MUST be used for all groups in a match. Measuring will be in accordance with Rule 4.10 and competitors will be ranked by the SMALLEST AVERAGE of the five groups. First Stage (June-Dec.) and Second Stage (Jan.-June) will be averaged, automatically, without additional charge, to determine the winner of the BOB SCOTT TROPHY. To be eligible for the SCOTT TROPHY ONE and the SAME rifle MUST BE USED in both Stages. Change load or scope will not affect your changes in any of the matches:

Jamie Holland, Monett, Mo.—573", .442", .552", .569", .618" — Average .551-inch. Same equipment as used in Class I Match. Prize: GOLD MEDAL.

Robert J. Scott, Blue Springs, Mo.—584, .442, .347, .756, .822 — Average .590". Same equipment as used in Class I Match. Prize: SILVER MEDAL.

Ray M. Bell, Springfield, Mo.—366, .812, .627, .910, .548 — Average .653". Same equipment as used in Class I Match. Prize: BRONZE MEDAL.

CENTER-FIRE OFFHAND MATCH RESULTS:

The Center Fire Offhand Postal Match consists of ten (10) shots on each of two (2) official 25-ring 100 yard targets at 100 yards from the standing or OFFHAND position for a possible score of 500. ANY CALIBER CENTERFIRE single shot rifle/ASSRA Rules, ANY SIGHTS. Scoring from lead edge of bullet hole:

Tom Matpack, Painesville, Ohio—232-226—458 x 250. Pope-HiWall, 32-40, 12#, Lyman 15X, Ideal 319201 184 grs .321" 1:30, A-B lube, B/S, duP 4227 14.0 grs. WT, no wads, Rem. 2 1/2. Prize: GOLD MEDAL.

Eugene C. Stanger, Elizabeth, N. J.—214 - 209 — 423. Pope-Ballard .32-40, 10#, Unertl 8X, Hudson 185 grs .323" 1:20, #99 lube, B/S, duP 4227 15.3 grs WT, cork on pdr, Rem. 9 1/2. Prize: SILVER MEDAL.

Paul Shuttieworth, Maple Glen, Penna.—191 - 226—417. Zischang - Sharps - Bór. .32-40, 12#, 1-5/8" Fecker 12X, Scott-Pope 196 grs .326" 1:30, Scott lube, B/S, duP 4759 15.0 grs WT, two 1/32" thick cork wads, Remington 2 1/2 primers. Prize: BRONZE MEDAL.

.22 RIMFIRE OFFHAND MATCH RESULTS:

The .22 Rimfire Offhand Match Postal consists of ten (10) shots on each of five (5) official 50-foot 25-ring targets at 50 feet from the standing or OFFHAND position for a possible score of 1250. ANY .22 rimfire cal. single shot rifle in accordance with ASSRA rules, ANY SIGHTS, Palm Rest. Scoring from the lead edge of the bullet hole:

Tom Matpack, Painesville, Ohio—245, 250*, 247, 245, 246—1233 x 1250. *Note the POSS! Diller-Stevens Walnut Hill, 12X Fecker, CCI Mini-Group ammo. Prize: GOLD MEDAL.

Col. Maurice E. Kaiser, Arlington, Va.—242, 246, 242, 244, 246—1220. Pope-Ballard, Unertl 6X, Remington Match ammo. Prize: SILVER MEDAL.

Paul Shuttieworth, Maple Glen, Penna.—242, 235, 249, 244, 242—1212. Stevens 49 (44), 12X Fecker, Remington Match ammo. Prize: BRONZE MEDAL.

Claude E. Roderick, Manager
A.S.S.R.A. Postal Matches
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Random Shots



Betty Summerall Duncan

By BETTY SUMMERALL DUNCAN

You have been such prolific **news-makers** that our usual instant re-play has been slowed recently. Not one of your newsworthy achievements has been overlooked — merely delayed, by space limitations. As long as we "tell it like it is" our news will be live; you won't read it anywhere else! Your indulgence is greatly appreciated.

For the very latest . . . **George Stidworthy** is up . . . up . . . and away in the "1600 Derby". A 1600-153X in Tucson just before Christmas was 1600 #39! And, that's not all. **Stidworthy won the Grand Aggregate with a 3198-273X!!!** Those of you who have experienced problems with irons and are familiar with those which have plagued George the past few years can well understand his elation over a metallic sight 1598. According to George, "It was a lot of satisfaction to follow up the 154X job at L.A. with a 153X at Tucson. Almost as satisfactory was the fact that the irons are going better and a little smoother all the time."

Redfield will have to revise its 3200 ad on George. He has improved upon it! Beginning with Perry, where he had 3199 any sights, Stidworthy went on to drop only 1 more point with scope (a 1599 at the Ariz. State) during 1969. Can you believe only 2 points down out of a possible 14,400? He had 1600 at Grand Junction, 3200 at Prescott, 1600 at Calif. State, then possibles at the Fall Round-Up and at Tucson. Fantastic? It truly is.

Now, I call upon those of you who have broken the 1600-150X barrier to

report (to me) how many times so that we may update our record book. **This was the 7th time for George Stidworthy!** We probably have all of you listed, but let's make sure.

Stidworthy voices some interesting observations—: "Sometimes I wonder how high these (X-counts) can go. At Colorado Springs when I fired my first 152X and at L.A. in November, I thought a smarter shooter would have had 156X both times." (Note: George, it was not a question of being "smart" at the Fall Round-Up. You are human, after all.) Continuing with George's thoughts, "In the 3200 . . . 305-306X looks tops to me, considering what you must have in equipment, conditions AND **psychologically**. I think we will some day shoot groups on tighter targets that would make higher X-counts superimposed on our present targets . . . but then, the psychological factor would be removed." Yes, it would make a difference . . . wouldn't it?

* * *

Following the priceless letter to "Uncle Herb" in November P.S. from **Orry**, Stidworthy's dog, there have been interesting responses from the **dogs** of other shooters. What a gimmick! We should have thought of it long ago (when my Boxers were scene-stealers). . . . **Vic Wandmayer's** dog named "Jones" claims to be quite an authority on wind. But, please check with Vic or George for the punch-line. . . . If your dogs would like to join in the fun, it could be revealing, as well as interesting. Before changing the subject, how-

ever, I must agree with Herb that **Orry** has much better manners than some people whom I know!

* * *

Everybody's talking about something to shoot for! . . . Here it is!!! **Western Wildcats President Tom Guerin**, in an effort to put "some life back in the smallbore game", has arranged with **Max Thompson** of Winchester-Western to make available a **Winchester Model 52-D** to be presented to the **Western Wildcats Champion**. (The usual "red tape", of course, requires that the rifle be shipped to a dealer, etc.). . . . For the annual **6400 Wildcats Mid-Winter** in Phoenix, March 12-15, it is anticipated that Remington and other dealers will also cooperate with comparable awards. . . And, confidentially, plans are afoot to send Wildcat prone teams to Bisley!

(Next page please)



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About people you know—:

Wedding bells tolled in Dallas, Jan. 17th, for National Smallbore Prone Champion Thomas Whitaker and his bride, the former Deborah K. Davis. A top feminine competitor, Debbie was a member of the 1969 International Dewar Team and lost the 1969 National Women's Prone title by only 3X's to Margaret Murdock. We wish much happiness for Debbie and Tom . . . and look forward to accelerated competition when they settle in southern Calif. upon Tom's separation from the Air Force.

* * *

And, speaking of Air Force shooters — before Bob Morgan's "hold baggage", shipped from Lackland AFB, Texas with his family's household effects, arrived at his new base,

Wheelus AFB in Tripoli, a new Libyan government dictated a new set of regulations. The result is most unfortunate! The Libyans confiscated Bob's two target rifles with custom barrels, an Ollie Parker prone stock, S&W K-22 and K-38, plus sights, scopes, and other items. He was attempting to ship the unopened boxes back to his dad, Freeman Morgan, when he was forced by Libyan officials to open the boxes. It is sincerely hoped that the Department of State and/or the military can recover these firearms for Bob Morgan. Reimbursement for the monetary value would be small compensation for such a loss!

* * *

On the Florida Scene—:

At Tampa . . . Lt. Jim Boddie, Jr., gave his Redstone Arsenal (Alabama) team a practical and convincing demonstration on winning tournaments. That was Pearl Harbor weekend (the 28th anniversary) and the Vietnam veteran must have felt fortunate to be shooting for pleasure . . . yes, even in unpleasant weather conditions. In strong wind and heavy rain, which completely soaked his gear, Jim Boddie fired a creditable 3188, for a winning Grand Aggregate.

Though details are a bit sketchy, it seems apparent that the worst day was with irons. Shooting the Redfield 3200 scope on a prone Anschutz, Jim had one just barely out at 50-meters for a 1599-136X. . . . Second in the Grand Agg. was Bob DeHart, the 12-year-old Master from Coral Gables, Fla. . . . Third was SFC Salazar of the Redstone Arsenal team . . . and that's a team to watch, for Pres Kendall's brother-in-law is already giving it some oomph.

* * *

Any discussion of Florida's smallbore prone shooting must ultimately get around to focusing on Dr. Paul Archer. Florida Smallbore Prone Champ, only he knows how many times he has won the title. He took it in the fall of '69 at Hollywood with a 3195-252X over Randy Schwartz' 3190-225X. That included a 1598-125X to 1596-110X Metallic Aggregate victory over Schwartz, particularly significant for the well-known optometrist.

Florida Grand Champion is the 1969 All-American from the University of Tennessee and Rabbit Club officer, Randy Schwartz. Trailing former MTU shooter Don Harmon, 780-41X to 779-36X in the iron sight

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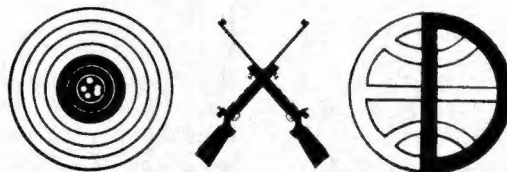
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position match, Schwartz pushed ahead with a 790-62X any sight win to score 1569-98X for the State Position Championship at Miami. Harmon's 1561-72X was good for 1st Master. . . . Combined prone and position aggregates gave **Randy Schwartz** a most impressive 4759-323X total, followed by **Harmon's** 4740-229X, and **Chuck Inderweisen's** 4713-235X.

We were all interested in Herb Hollister's reprint of **Doc Archer's** "The Eye and Iron Sights" from the Dec. 1952 **Shooters News** . . . even though I rather suspect it was a surprise to Doc, himself, to be a guest writer. It was circa 1950 that Doc Archer inserted my prescription in a Kodak adapter ring for use in the rear sight. His ideas are excellent. Perhaps, **Doc**, you would like to update your earlier theories for **P.S.** readers as you did for British shooters last summer, where you were so enthusiastically received.

Not only has **Dr. F. P. Archer** been exceedingly generous with his private rifle range at Homestead (Fla.), but he has provided the inspiration and instruction for several junior shooters to be transformed into topflight competitors. At the 18th Annual Pine Tree Black Hawk Smallbore Tournament in November, 17-year-old **Barbara Hampson** was top performer. Her 1599-134X may well be a record for the range which has yet to produce a perfect 1600. Always the genial host, **Doc Archer** competed in his own tournament for the first time and was runner-up to his protégée with a 1598-118X. Both shot Anschutz rifles, with prescription lens incorporated in their rear sights. . . . Interesting to note that in the Aggregate, young shooters monopolized five of the six top places; four being in the Junior category and a fifth, in her twenties. . . . A young Marksman to watch is **Richard Tiedemann**, of Hollywood, whose 1589-94X exceeded the high Expert score by 6 points.

From Clearwater (Fla.)—: Among shooting notables, **Frank Kahrs** occupies his own very special niche. What a truly remarkable person he is! At 86, he has slowed down a bit only because of failing eyesight. He has had to move from 100-yds back to 50-yds for his .22 testing from the bench. All of the testing is with Remington Match — not surprising for "Mr. Remington". From his three 37's . . . one with a Womack and one with a Johnson barrel . . . a straight Remington, plus a 52, Frank gets con-

sistent dime-sized groups or better. Mainstay of the **Clearwater Rifle Club**, he has recently "retired" after nearly fifteen years as Secretary-Treasurer, an almost full-time job. The past several months have been busy ones for Frank . . . following the fire, presumably set by arsonists, which destroyed their clubhouse last March. By the end of the summer, the new \$5000 clubhouse was finished and in full operation. Supervised, of course, by Frank Kahrs, it is well worth all the time and effort expended. . . . **Frank** sends his best to his many friends.

* * *

A brand-new organization, the **New Jersey Smallbore Shooters Affiliation**, has been formed with the solid backing of fifteen clubs. Experiencing a prior lack of communication with the **Association of New Jersey Rifle & Pistol Clubs**, which the smallbore shooters considered as hampering their competitive program, **New Jersey** shooters have organized. We shall keep you informed on developments which, actually reflect a nationwide trend.

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3. A. Glover	.417
4. C. Straight	.430
5. R. Hart	.450
Last Place	1.042

Small group for day
Marlin Bassett — .199

* * *

JANUARY 25TH SHOOT	
49 Competitors (24 under 1/2 inch)	
1. I. Whitney	.344
2. J. Guilds	.367
3. G. Johnston	.383
4. W. Tardy	.396
5. J. Stekl	.400
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